WHAT IS CLAIMED IS:

1. A pneumatic tire for a two-wheeled vehicle, comprising:

bead cores embedded in a right and left pair of bead parts;

a semi-radial bias carcass layer which extends from one bead part to the other bead part in the shape of a toroid, end portions of which are rolled up around the bead cores to be latched at the bead cores;

a radial reinforcement band layer which is disposed only at an inner side of tread ends in a tire width direction, and is disposed at a tire radius direction outer side of a crown part of the semi-radial bias carcass layer, comprising at least one ply at which a plurality of reinforcement cords extending in a radial direction are arranged;

a belt layer which is disposed at an outer side of the radial reinforcement band layer in the tire radius direction, comprising at least one belt ply at which a plurality of reinforcement cords are arranged; and

a tread layer which is disposed at an outer side of the belt layer in the tire radius direction,

wherein,

in the semi-radial bias carcass layer, at least two carcass plies in which a plurality of reinforcement cords extending in a direction of 50 deg to 80 deg with respect to a tire equatorial plane are arranged are provided such that the reinforcement cords of the respective carcass plies are crossed with each other, and

assuming that the absolute value of the total sum of rigidity components in a circumferential direction of the belt layer is $|\Sigma Fb|$ and the absolute value of the total sum of rigidity components in a width direction of a case made up of the semi-radial bias carcass layer and the radial reinforcement band layer is $|\Sigma Fc|$, $|\Sigma Fb|/|\Sigma Fc| = 1.3$ to 3.0 in a case in which the reinforcement cord constituting the belt layer is a textile cord, and $|\Sigma Fb|/|\Sigma Fc| = 0.03$ to 0.1 in a case in which the reinforcement cord constituting the belt layer is a steel cord,

provided that

$|\Sigma Fb| = Mbi \times Nbi \times \cos(\alpha bi) \times$ number of belt layers (i)

where

Mbi: the initial modulus of elasticity at 0.5% elongation for the reinforcement cord constituting the respective belt layers (the unit is cN/dtex for the textile cord, and is kN/mm^2

for the steel cord)

Nbi: end count (cords / cm) for the reinforcement cord constituting the respective belt layers

αbi: inclination angle (deg) with respect to the circumferential direction for the reinforcement cord constituting the respective belt layers

and

$|\Sigma Fc| = [Mpi \times Npi \times \sin(\alpha pi) \times \text{number of the carcass plies}] + [Msi \times Nsi \times \sin(\alpha si) \times \text{number of the radial reinforcement band layers}]$

where

Mpi: the initial modulus of elasticity (cN/dtex) at 0.5% elongation for the reinforcement cord constituting the carcass ply

Msi: the initial modulus of elasticity (cN/dtex) at 0.5% elongation for the reinforcement cord constituting the radial reinforcement band layer

Npi: end count (cords / cm) for the reinforcement cord constituting the carcass ply

Nsi: end count (cords / cm) for the reinforcement cord constituting the radial reinforcement band layer

αpi: inclination angle (deg) with respect to the circumferential direction for the reinforcement cord constituting the carcass ply

αsi: inclination angle (deg) with respect to the circumferential direction for the reinforcement cord constituting the radial reinforcement band layer

2. The pneumatic tire for two-wheeled vehicle of claim 1, wherein

the reinforcement cord in the carcass layer has the initial modulus of elasticity Mpi of 29 to 56 cN/dtex; the inclination angle αp of 50 to 80 deg with respect to the circumferential direction; and the end count Np of 5 to 13 / cm,

the reinforcement cord in the radial reinforcement band layer has the initial modulus of elasticity Ms of 50 cN/dtex or more; the inclination angle αs of 80 to 90 deg with respect to the circumferential direction; and the end count Ns of 8 to 13 /cm, and

the reinforcement cord in the belt layer is the textile cord having the initial modulus of elasticity Mb of 150 cN/dtex or more, or the steel cord having the initial modulus of elasticity Mb of 8 kN/mm^2 or more; and has the inclination angle αb of 0 to 30 deg with respect to the circumferential direction; and the end count Nb of 8 to 13 / cm.

3. The pneumatic tire for two-wheeled vehicle of claim 1 or 2, wherein the reinforcement

cord in the radial reinforcement band layer has the elasticity higher than that for at least the reinforcement cord in the carcass layer.

4. The pneumatic tire for two-wheeled vehicle of any one of claims 1 to 3, wherein the width of the radial reinforcement band layer is 50 to 90% of a tread periphery width measured along a surface of the tread.

5. The pneumatic tire for two-wheeled vehicle of any one of claims 1 to 4, wherein
the reinforcement cord in the carcass layer is a nylon cord,
the reinforcement cord in the belt layer is an aromatic polyamide cord, and
the reinforcement cord in the radial reinforcement band layer is a rayon cord.

6. The pneumatic tire for two-wheeled vehicle of any one of claims 1 to 4, wherein
the reinforcement cord in the carcass layer is a nylon cord,
the reinforcement cord in the belt layer is a steel cord, and the belt layer is a spiral belt layer which is formed by spirally rolling up the steel cord, and
the radial reinforcement band layer is of a single layer, and the reinforcement cord is an aromatic polyamide cord.